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# BULLETIN

## State Board of Education

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SUPPLEMENT No. 2

### VOCATIONAL EDUCATION

*Virginia's*  
Plan of the State Board for  
Vocational Education



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## INTRODUCTION.

The Assembly of Virginia of 1918, passed a law accepting the conditions under which the Federal aid provided by the Smith-Hughes Act to provide for the promotion of vocational education may be secured. The Virginia statute appropriated money to meet dollar for dollar the Federal funds for the following purposes:

- (a) For the salaries of teachers, supervisors, or directors of agricultural subjects.
- (b) For the salaries of teachers of trades and industrial subjects and home economics.
- (c) For the maintenance of courses preparing teachers, supervisors, and directors of agricultural subjects, and teachers of trades and industrial and home economics subjects.

Under the Virginia Act, the State Board of Education is named as the State Board for Vocational Education and therefore assumes the responsibility, in co-operation with the Federal Board for Vocational Education, of carrying out the provisions of the Federal law.

Previous to the opening of the present school year the Governor of Virginia, by proclamation, had accepted the provisions of the Federal Act. A committee of the State Board presented a carefully prepared plan for vocational education in Virginia, which plan was approved by the Federal Board. Under this plan eighteen or twenty high schools are operating departments of vocational education in agriculture and home economics and in the City of Richmond courses in the trades and industries as well as in home economics are maintained.

The present plan is offered in order to define as clearly as possible the policy of the State Board for Vocational Education. It attempts to furnish pertinent information to local school boards or institutions which may apply for funds for vocational education, and also to give those which accept or have accepted funds, sufficient directions to insure full compliance with the provisions of the law.

The State Board earnestly desires that vocational education receive the serious consideration it deserves. Social and economic conditions in our State demand that constructive thought be given to the development of trained workers on the farm, in the shop and in the home. It will be the policy of the Board to co-operate in every way possible in the development of this training. How-

ever, careful restrictions and regulations must guard the use of Federal and State Funds for vocational education to insure against waste and to guarantee reasonable vocational efficiency.

#### I. ADMINISTRATION AND SUPERVISION.

1. General Direction. The Smith-Hughes Bill creates a Federal Board for Vocational Education for the general administration of the provisions of the act.

The State Board of Education is the State Board of Vocational Education. The President of the State Board, Harris Hart, is the Chief Executive Officer of the State Board for Vocational Education.

The State Board contemplates the establishment of a department of vocational education with a State Director and special supervisor in each branch of the work. A Supervisor of Vocational Education in Agriculture has already been appointed.

The county or city school board is the local authority with which the State Board will deal, and the officers of such boards are the responsible agents for the proper local administration of the funds for vocational education.

The Federal Board is the agent of the Government and the trustee of the Federal funds for vocational education. The State Board is the agent of the State and the trustee of the Federal Board for the funds committed to its care. The county or city school board is the local agent and trustee of funds granted by the State Board.

The Federal Board will deal with the vocational education in Virginia only thru its trustee, the State Board. The Federal Board does not undertake to prepare plans of operation nor courses of instruction for the State. Such plans and courses must be prepared by the State Board and be approved by the Federal Board before becoming operative.

No State can claim by right, money from the Smith-Hughes Fund; its claim can be based solely on its readiness and capacity to meet the conditions of the Federal Act. In like manner no local board can claim by right an appropriation from the Federal and State fund. The State Board will give careful and sympathetic attention to every local appeal and within the limits of funds at its disposal will grant such appeals as give promise of the highest vocational efficiency.

2. Agricultural education as indicated above is under the special supervision of a State Supervisor. He visits all the agricultural departments in high schools, advises as to the best methods of instruction, examines the equipment, studies the project work

and reports to the State Board conditions and recommendations for improvement.

3.-4. Trade and industrial education and home economics will likewise be under the direction of State Supervisors. Home economics is now being offered in practically all the high schools which have agricultural departments. It is proposed to develop this work as speedily as funds will permit. Courses in trades and industries will be encouraged and developed in the cities of the State. Richmond City is furnishing this session excellent work in the trades and industrial education in conformity with the requirements of the Smith-Hughes Act.

5. Teacher training will be under the direction of the State Board for Vocational Education. At the several institutions at which it is established the local supervisor in charge will exercise careful supervision over the work and report thru the president of the institution to the State Board. A director from the Board will make inspection of the teacher training to see that all conditions fixed by the Board are carried out.

#### 6. Funds and How Paid.

The following funds are available for the year 1919:

For teachers of agriculture every dollar of Federal funds is matched by a dollar from State funds. For teachers of trades, industries, and home economics and for teacher training, every dollar of Federal funds is matched by \$0.75 from the State funds and \$0.25 from the local board or institution.

#### For Session 1918-19.

	Federal	State	Local	Total
(a) For salaries, teachers, supervisors, or directors of agriculture .....	\$ 24,075	\$ 24,075	.....	\$ 48,150
(b) For salaries teachers of trades, industrial subjects and home economics.....	8,400	6,300	\$ 2,100	16,800
(c) For teacher training in agricultural subjects, trades and industries and home economics .....	15,680	11,760	3,920	31,360
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	\$ 48,155	\$ 42,135	\$ 6,020	\$ 96,310

Of the amount (b) for salaries of teachers of trades, industrial subjects and home economics, at least  $33\frac{1}{2}$  per cent. of the Federal fund shall be applied to part time schools or classes for workers over fourteen years of age who have entered upon employment. Not more than 20 per cent. of fund (b) appropriated for salaries of teachers of trades, industrial subjects and home economics shall

be used for home economics. The State Board may require that for every dollar of Federal and State funds appropriated for salaries of teachers of trade and industries and home economics, the local board shall spend an equal amount for the same purpose.

The amount (c) for teacher training shall be so expended that not more than 60 per cent. and not less than 20 per cent. shall be used for (1) the preparation of teachers, supervisors or directors of agricultural subjects, (2) the preparation of teachers, etc., of trade and industrial subjects, (3) the preparation of teachers of home economics subjects. The State Board fixes the apportionment as follows: (1) 45 per cent., (2) 25 per cent., and (3) 30 per cent.

The following table shows the sub-distribution of funds (b) and (c) in accordance with the foregoing condition.

(b) For salaries, teachers of trade and industrial subjects and home economics:

**For Session 1918-19.**

	Federal	State	Local	Total
Part time schools or classes.....	\$ 2,800	\$ 2,100	\$ 700	\$ 5,600
Home economics .....	1,680	1,260	420	3,360
Trades and industrial subjects..	3,920	2,940	980	7,840
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	\$ 8,400	\$ 6,300	\$ 2,100	\$ 16,800

(c) For teacher training in agricultural subjects, trade and industrial subjects and home economics:

**For Session 1918-19.**

	Federal	State	Local	Total
Training teachers, agriculture...	\$ 7,056	\$ 5,292	\$ 1,764	\$ 14,112
Training teachers home eco- nomics .....	4,704	3,528	1,176	9,408
Training teachers' home eco- industries .....	3,920	2,940	980	7,840
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	\$ 15,680	\$ 11,760	\$ 3,920	\$ 31,360

Funds for vocational education will be paid by the State Board to the local board or institution in the form of re-imbursement for money already expended. Payments will be made quarterly, on reports sent to the State Board on the first of October, January, April and July. Forms for these reports will be furnished which must show precisely how and for what purpose funds have been spent. Re-imbursement will be made from Federal and State funds to the amount appropriated only on condition that the provisions of the State plan for vocational education have been properly carried out.

7. How teachers of Vocational Education are elected and paid. Teachers of vocational education shall be elected by the local school boards in such manner as other teachers are elected. **Every precaution must be taken to secure teachers whose qualifications meet the minimum requirements for vocational teachers, fixed by the State Board.** No re-imbursement for salary will be made for any teacher who falls short of those requirements.

Teachers of vocational education shall be paid in the same manner as regular teachers, the local board receiving re-imbursement each quarter as provided in this plan.

The teacher of agriculture shall be engaged for twelve months at a minimum annual salary of \$1,500. The home economics teacher shall be engaged for not less than nine months and be paid a salary of not less than \$675.

## II. GENERAL CONDITIONS.

The following general conditions must be carefully observed, otherwise no Federal or State funds for vocational education can be allowed.

1. The education shall be under public supervision or control.
2. The controlling purpose of the education is to fit for useful employment.
3. The education shall be less than college grade.
4. The education shall be designed to meet the needs of persons over fourteen years old who have entered upon, or are preparing to enter upon, some useful employment.
5. Every dollar of Federal funds for agricultural education shall be matched by a dollar of State money, and every dollar of Federal funds for training in the trades and industries, in home economics and for teacher training, shall be matched by a dollar of State and local money.
6. Federal and State funds shall be used for the following purposes exclusively:
  - A. Salaries of teachers, supervisors, and directors of agriculture.
  - B. Salaries of teachers of trades, home economics, and industrial subjects.
  - C. Maintenance of teacher training for vocational teachers. No part of the Federal or State funds can be used to purchase real estate, to construct buildings, or to provide equipment.

### III. AGRICULTURAL EDUCATION.

1. Agricultural education may be offered in special agricultural secondary schools or as a department in regular high schools.
2. The following are the requirements for plant and equipment which must be furnished by the local school board before any Federal or State funds are allowed:
  - (a) Five acres of land adjacent to or convenient to the school.
  - (b) Farm shop room with equipment costing not less than \$250.00.
  - (c) Room of ample size properly arranged and well lighted for the teaching of agriculture, with laboratory equipment costing at least \$350.00.
  - (d) The State Board urges that the practical work in agriculture and the six months' project be carried on on the home farm. Wherever it is necessary to provide for a part of this practical instruction on the school farm, farm equipment and stock sufficient to meet the needs of the course of instruction must be provided by the local school board. The minimum cost of such equipment will be \$350.00.
3. The local school board shall provide an annual amount for maintenance sufficient to replace or replenish the equipment mentioned above in paragraph (a), (b), (c), and (d) in such manner that the value of such equipment will be at the beginning of each school year at least equal to the minimum in each case.
4. The following is the course of study in Vocational Agriculture:

#### COURSE OF STUDY IN AGRICULTURE.

##### FIRST YEAR.

###### *Plant Production (Agronomy).*

A study of plant growth and development as influenced by soils, climate, fertilizers, tillage, and heredity. This course, in addition to presenting the underlying principles of crop production, should serve as an introduction to the study of general agriculture. In teaching the fundamental principles of agriculture, the applications of the special sciences to the various phases of agriculture is essential. To this end the high school course in general science for the first year should be correlated with the course in agriculture.

This general scheme in this course, as well as in the courses for the following years should consist of: recitations, laboratory work, field and classroom demonstrations by the instructor, and supervised project work. The main topics for this year are: plant life, soils, fertilizers, tillage, and field crops.

*Laboratory and Classroom Work.* Five eighty-minute periods a week for nine months.

*Practical Agriculture and Supervised Project Work.*

Each pupil is required to choose a project or projects bearing on some phase of plant production, and conduct it under the supervision of the teacher of agriculture for a continuous period of at least six months. Following are some of the types of projects in plant production:

#### PRODUCTION PROJECTS.

The profitable production of one-half acre or more of one of the following crops: Corn, one of the sorghums, cane, tobacco, potatoes, sweet potatoes, cotton, peas, beans, peanuts, or any annual crop which may be sold for cash.

#### DEMONSTRATION PROJECTS.

In connection with, or in addition to, his production project, the student may carry out one or more of the following demonstrations: (1) Trying out a crop new to the region, (2) a variety test, (3) working out a rotation, (4) a fertilizer test, (5) use of barnyard manure, (6) use of cover crops and green manures, and (7) improvement by seed selection.

*Farm Shop Work.* Two eighty-minute periods a week.

Elementary farm drawing; farm carpentry; use and care of wood-working tools; making bench hook; sawbuck, seed-testing box, ax handle, corn rack, farm gates, etc. Practical work in ordinary repairs about farm building, repairs to wood-work on wagons and other farm vehicles.

*English.* First year course as prescribed in the High School Course of Study.

*Mathematics.* Prescribed first year course.

*General Science.* Prescribed for the first year.

## SECOND YEAR.

*Animal Production (Animal Husbandry).*

1. Types and breeds of: cattle, horses and mules; sheep, swine.
2. Feeds, feeding and care of: dairy cattle; beef cattle; horses and mules; sheep, swine.
3. Milk and its products.
4. Poultry.
5. Bees.
6. Diseases of animals.
7. Improvement of animals.

*Laboratory and Classroom Work.* Five eighty-minute periods a week for thirty-six weeks.

*Practical Animal Husbandry and Supervised Home Projects.*

Average of five hours and forty minutes a week for nine months. Each student is required to choose a project or projects bearing on some phase of the year's work in animal husbandry and conduct it under the supervision of the teacher of agriculture, for a continuous period of at least six months.

## SUGGESTIONS FOR HOME PROJECTS IN ANIMAL HUSBANDRY.

Care of calves on personal account.

Care and feeding of one or more cows for one year.

Keeping a dairy herd record for one year.

Developing a local milk or butter trade.

Production of baby beef.

Fattening cattle for the market.

Developing swine for breeding.

Feeding swine for pork production.

Care of sheep on personal account.

Care of sheep for share of increase.

Care and training of colts.

Care and management of team.

Care and management of poultry.

Handling bees on personal account.

## ACCEPTABLE SUBSTITUTES FOR PROJECTS.

Work on general stock farm.

Work on dairy farm.

Work on poultry farm.

Work on apiary.

*Farm Shop Work.* Two eighty-minute periods each week for nine months.

Continuation of farm carpentry. Introduction of forge and iron work. Repair of iron parts of farm tools and machinery. Construction of: sheep feeding trough; chicken feed box; trap nest; wagon jack; hog cot; gate hook. Making irons for: plank drag; farm gate; cattle rack; wagon box. Mending of harness. Splicing of ropes for halters.

*English.* As prescribed for second year in the State High School Course.

*Mathematics.* Second year work as prescribed.

*Chemistry.* As prescribed in the High School Course for rural high schools.

### THIRD YEAR.

#### *General Horticulture and Field Crops.*

The relative time to be spent in horticulture and field crops will depend upon the locality in which the course is given. The major portion of the time, however, should be given to horticulture, reserving the remainder of the time for discussions on those field crops which are of particular interest locally.

#### *Outline for General Horticulture.*

1. Plant propagation.
2. Fruit growing.
3. Home floriculture.
4. Landscape gardening as applied to home ground improvement.
5. Vegetable gardening.
6. Improvement of plants.

#### *Outline for Field Crops.*

(Choose for study those which are of particular local interest). Cultural methods, varieties, diseases, method of judging, and method of improvement: oats, wheat, rye, barley, corn, the sorghums, cotton, the legumes, and the farm grasses.

*Laboratory and Classroom Work.* Five eighty-minute periods a week for thirty-six weeks.

*Practical Work in Horticulture and Field Crops; and Supervised project work.* An average of five hours and forty minutes a week for thirty-six weeks.

**SUGGESTED HOME PROJECTS.***Fruit Growing.*

1. Care and management of bearing orchard.
2. Establishing of home orchard.
3. Renovation of old orchard.
4. Ridding orchards of insect pests and diseases.
5. Top-working trees to more desirable varieties.
6. Harvesting and marketing fruit crops.
7. Production projects with strawberries and other small fruits.

*Home Floriculture.*

These projects are particularly suited to girls:

1. Care and management of home flower garden.
2. Contests in growing special plants suited to locality.
3. Producing plants or flowers for sale.
4. Trying out plants little known in community.
5. An exhibit of flowers grown.

*Home and School-Ground Improvement.*

These projects are well adapted to work of girls:

1. Ornamenting home grounds completely or in part as: Front and back yard improvement, planting trees, shrubs, hedges, lawns, or beds of flowers.
2. Community improvement campaign.
3. Ornamentation of school grounds.

**VEGETABLE GARDENING.***School Garden.*

1. Wherever the home vegetable garden needs exploitation, the school garden might well be made a model home garden.
2. It may be used for the introduction of new varieties, so that students and patrons may secure a wider knowledge of vegetable farms.
3. It may be used to supply vegetables and fruits for the domestic science work, especially in connection with canning practice.

*Home Garden.*

1. Care and management of home vegetable garden.
2. Production projects with an acre or less of crop suitable to locality and for which there is a ready market.
3. Correlation with canning-club work.
4. Improvement of varieties by seed selection.
5. Seed-growing experiments.
6. Variety tests.
7. Control of insects and diseases.
8. Production and sale of plants grown in hot-beds, etc.
9. Developing city trade through parcel post.
10. An exhibition of products grown.

*Farm Shop Work.* Two eighty-minute periods each week for thirty-six weeks.

Continuation of work in wood and iron, but with particular application to horticulture and field crops. Introduction of cement work. Construction of: sidewalks and floors; foundation walls and steps; troughs, fence posts, etc.

*English.* Regular third year high school course.

*Mathematics.* Prescribed third year work with emphasis on plane geometry.

*English History.* As prescribed in the high school course.

#### FOURTH YEAR.

*First Term.**Rural Engineering and Farm Mechanics.*

The major portion of the time should be given to a study of *farm machinery* and *farm structures*. Three or four lessons should be given in each of the following: farm sanitation; agricultural surveying; farm drainage; irrigation; terracing; and road building.

*Laboratory and Classroom Work.* Five eighty-minute periods a week for eighteen weeks.

*Practice in rural engineering, operation of farm machines and supervised project work.* Average of five hours and forty minutes for eighteen weeks.

## SUGGESTED PROJECTS.

Any of the lines of work suggested below may be either group projects carried on by the students at the school or upon neighboring farms, or individual projects conducted upon the home farm:

1. Construction of farm buildings.
2. Concrete construction of walks, feeding floors, etc.
3. Installation of heating, lighting, plumbing and sewer systems.
4. Clearing and leveling land.
5. Laying out irrigation and drainage system.
6. Terracing.
7. Road making.
8. Installing engine and connecting with farm machinery.

*Farm Shop Work.* Two eighty-minute periods a week for eighteen weeks.

Mechanical Drawing as applied to rural engineering and farm structures should be taught as a part of the shop work. Continue work of wood, iron, and forge, emphasizing the making of plans and models for farm structures. Construction and repair of simple parts of machines and implements.

*Second Term.**Rural Economics and Farm Management.*

Among the many topics of rural economics and farm management worthy of consideration in a high school course the following should receive emphasis:

1. Farming as a means of making a living.
2. Farming as a mode of life.
3. Problems of rural social life.
4. Farming as a business.
5. Capital.
6. Rural credits.
7. Land tenure.
8. Acquiring land.
9. Types of farming.
10. A study of successful farms--local.
11. Buying farm equipment.
12. Increasing production.
13. Maintenance of fertility.
14. Live stock and soil fertility.
15. Rotation of crops.

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16. Planning the farm and farmstead.
17. Farm labor.
18. Factors of agricultural production.
19. Farm records and accounts.
20. Marketing farm products.
21. Co-operation in agriculture.

*Classroom Work.* Five forty-minute periods a week for eighteen weeks. Practical Work. Home and Community Project Work. Average of nine hours a week for eighteen weeks.

#### SUGGESTED PROJECTS.

1. Making of community surveys.
2. Keeping of farm records and accounts.
3. Management of a farm.

*Farm Shop Work.* Two eighty-minute periods a week for eighteen weeks. Continuation of the work of the first term.

*English.* Regular fourth year High School Course.

*United States History and Civics.* Prescribed course.

*Physics.* Prescribed course with special emphasis on farm physics.

For the arrangement of a course of study by daily lessons, which is applicable to Virginia schools and acceptable to the State Board for Vocational Education, see:

United States Department of Agriculture, Bulletin No. 521, "Course in Secondary Agriculture for Southern Schools" (1st and 2nd years).

United States Department of Agriculture, Bulletin No. 521, "Course in Secondary Agriculture for Southern Schools" (3rd and 4th years).

5. The methods of instruction are indicated by the content and suggestions in the course of study. The instructor must keep in mind the fact that he is training students for farm life. To this end emphasis must be put on practical work in such way as to couple the student directly with farm interests. As indicated in the above outline, carpentry is taught directly in relation to farm activities, in the building of pig sties, poultry houses, etc., and drawing must be given as a basis for this work by outlining plans and making models. Particularly must the project work be conducted in a practical manner, encouraging the student to realize what he can do and how it relates to the development of the farm

and his own advancement. The related subjects shall be presented as a scientific basis for practical agriculture.

The academic subjects shall be taught in such way as to inspire love of country, good citizenship, and individual responsibility must be emphasized. Thru the course in English a taste for good literature should be developed and every encouragement given to the reading of appropriate periodicals and magazines.

6. Teachers of vocational agriculture shall have the following qualifications:

- A. A four-year college course in agriculture based on entrance requirements as follows:
  - (1) Completion of a standard four year high school course or its equivalent.
  - (2) Two years' practical experience in farm work or in intimate contact with such work.
- B. The course shall embrace 60 college hours distributed approximately as follows:
  - (1) Agricultural—24 hours—Embracing field and forage crops, soils and fertilizers, animal husbandry and dairying, poultry husbandry, horticulture, vegetable gardening, farm mechanics, farm management, etc.
  - (2) Sciences—15 hours—Chemistry, physics, biology, geology, etc.; agricultural chemistry, plant pathology, plant breeding, veterinary science, etc.
  - (3) Non-vocational—12 hours—English, history, and civics, rural economics, rural sociology, etc.
  - (4) Professional—9 hours—Educational psychology, principles and general methods, school management, vocational education, special method in agriculture, observation and practice teaching.

7. The qualifications of supervisors or directors of agriculture shall be at least such as to meet the standards set for teachers of agriculture and in addition at least two years of successful experience in teaching or supervising agriculture is required. It is desirable that supervisors and directors have made some special study of general problems of vocational education particularly in relation to secondary schools.

8. The course of study indicates what six months' practical work shall be carried on under the direction of the teacher of agriculture. This work may be done on the school farm, but the State Board insists that in every case where it is possible it be done on

the home farm. For the boy who has had no opportunity to learn the simple manipulative processes of farming, and who needs to be taught how to harness a horse, how to milk a cow, etc., instruction on the school farm will be valuable. For the large majority of boys, however, the home farm furnishes a better means responsibility on his part not only for doing the work but for of carrying on the project.

The home project must be carried on by the boy with full responsibility on his part not only for doing the work but for financing the project. He should keep a strict account as a business enterprise and be able to make a final statement showing his profit or loss. In addition to the project certain laboratory exercises such as testing milk, seed testing, etc., may be undertaken.

#### IV. TRADE, HOME ECONOMICS AND INDUSTRIAL EDUCATION.

1. *The Federal fund available for trade, home economics and industrial education for session 1918-19 is \$8,400. This amount will be used for the following types of classes with the approximate distribution indicated:*

(a) Evening schools or classes .....	\$1,000
(b) Part time schools or classes.....	2,800
(c) Unit trade schools or classes.....	1,920
(d) Industrial schools or classes in cities of less than 25,000 .....	1,000
(e) Home economics .....	1,680

The above amounts will be matched dollar for dollar by State and local funds.

##### 2. *Trade and industrial education.*

A. The State Board proposes to aid from the Federal Funds for the year ending June 30, 1919, the following kinds of trade and industrial education:

- (a) In evening industrial classes, the instruction shall be supplementary to the daily employment and shall include classes for machinists, molders, carpenters, plumbers, etc.; for women, courses in sewing, dressmaking, cooking, millinery, etc.
- (b) In part time schools or classes.
  - (1) Trade extension courses will be offered those already engaged in some trade who desire more thorough training.

ing in that trade. The work will supplement the daily employment and be adapted to the immediate needs of those who apply for the course.

- (2) Trade preparatory classes will be conducted for those who have entered one industrial pursuit or trade and desire training in a different trade.
- (3) General continuation part time classes will be conducted for persons engaged in any useful employment who desire courses which will contribute to their intellectual and vocational development.

- (c) Unit trade classes will be organized in day schools for the benefit of printers, machine draftmen, carpenters, machinists, etc.
- (d) In day schools in towns and cities of less than 25,000, industrial classes will be encouraged wherever practicable, to meet the needs of the community. Instruction will be given in shop work, carpentry, printing, molding, etc., as the needs of the pupils may dictate.

B. In evening industrial schools and classes.

- (a) The controlling purpose shall be to supplement the daily occupation in such way as to increase vocational efficiency.
- (b) Only persons over 16 years of age shall be admitted to these courses.
- (c) The plant and equipment shall be such as to satisfy the State Board that ample facilities are provided for proper instruction.
- (d) A minimum for maintenance is required which will insure that teachers who meet the standards set up by the State Board may be secured.
- (e) The course of study shall be submitted to the State Board for approval. The character and content of the course shall be such as to increase the skill or knowledge of the worker in the occupation in which he is engaged. In evening schools the short unit course will be most effective.

The following course is suggestive of what may be offered in the evening schools:

For Plumbers' helpers:

- (1) Drawing and blue print reading.
- (2) Study of State and city rules and regulations governing the trade.
- (3) Proper means of installation of plumbing.

- (4) Shop work, pipe fitting, etc.
- (5) Costs, estimating, etc.
- (6) Applied science.
- (7) English with compositions on shop subjects.
- (8) Civics.

(f-g) The school work which supplements the vocational classes shall be correlated as far as possible with the trade or industry taught. Mathematics should be based on problems met with in actual shop experience. English should consist largely of composition work dealing with descriptions of the industry or trade and weekly visits to plants, etc. History ought to emphasize the industrial development of the country.

(h) The qualifications of teachers in specific shop subjects shall be academic training at least equivalent to that required in the elementary schools and practical shop experience at least two years beyond the apprenticeship stage.

For teachers of related subjects the completion of at least two years of college work (one-half of which should be in technical and scientific subjects, with a satisfactory contact with shop conditions).

C. (a) In part time schools or classes trade extension courses may be offered.

- (1) The controlling purpose of such courses is to increase the efficiency of persons engaged in some useful occupation. The course will be adapted to the needs of those who are engaged in factories, shops, stores, etc., with the idea of aiding their vocational and intellectual advancement.
- (2) These courses are open to persons not under fourteen years of age nor over eighteen years.
- (3) The plant and equipment shall be such as to satisfy the State Board that the purposes of the course can be carried out in a satisfactory manner.
- (4) A minimum for maintenance shall be required which will insure that teachers of satisfactory qualifications can be secured.
- (5) The character of the course shall be determined by the vocational and intellectual needs of the pupils and the content such as will couple the course directly with the actual occupation in which the pupils are engaged, or prepare them for a more useful occupation.

- (6) The methods of instruction shall adapt the work of the school as far as possible to the demands of the shop, factory, or other occupations. By shop inspection and a careful study of shop conditions the school can be made a continuation of shop practice with such added training as will make the work more efficient practically as well as socially.
- (7) The part time school shall be in session for at least nine months a year and must provide instruction for not less than sixteen hours a month or four hours each week.
- (8) The qualifications of teachers shall be not less than the minimum required for the evening schools or classes.

(b) Trade preparatory part time schools or classes may be conducted under the direction of the State Board.

- (1) The controlling purpose is to give instruction designed to fit persons for some useful employment other than the trade or industry in which they are engaged.
- (2) Pupils shall be over 14 years of age.
- (3) The plant and equipment shall be the same or similar to that required for trade extension work.
- (4) The minimum for maintenance shall be such as to insure teachers of approved qualifications.
- (5) The character and content of the course will vary with the needs of pupils, but in general must conform to the requirements for trade extension classes.
- (6) The methods of instruction shall conform to the general methods in the trade extension instruction.
- (7) The length of term shall be not less than 144 hours per year or 4 hours per week for 36 weeks.
- (8) Teachers must have the same qualifications as required for trade extension instruction.

(c) General continuation part time schools or classes may be offered.

- (1) The purpose of the course shall be to increase civic or vocational efficiency.
- (2) The course shall be designed for pupils from 14 to 18 years of age.
- (3) The minimum requirement for plant and equipment shall be such as will satisfy the State Board that ample facilities for the course are provided.

- (4) For maintenance an amount shall be guaranteed which will enable well qualified teachers to be employed.
- (5) The course of study may provide special training related to the daily occupation of the worker or a general academic course intended to increase civic and vocational efficiency.
- (6) For special branches and subjects taught the method of instruction shall closely relate shop experience and school work. Academic branches shall be presented in such manner as will inspire love of country.
- (7) The length of term shall be not less than nine months with sixteen hours instruction per month.
- (8) For shop subjects and related branches the qualifications of teachers shall be equivalent to those fixed for the evening classes. For other subjects taught, two years of study in advance of the high school grades are required.

D. The State Board proposes, when practicable, to establish day unit trade schools or classes.

- (a) The controlling purpose will be to fit persons for useful employment in some trade or industry.
- (b) The age of admission shall be not under 14 years.
- (c) The plant and equipment must be adequate to teach in a satisfactory manner the trade or industry.
- (d) A minimum for maintenance is required to provide salaries for qualified teachers and to furnish the necessary materials for carrying on the work.
- (e-f) The course of study may vary in length from one to four years. Non-vocational and related work shall not require more than fifteen hours per week, and may include such subjects as English, penmanship, history (including industrial history), commercial geography, civics, and hygiene, and for related work such subjects as related mathematics, shop drawing, related science, etc.

Both the type of work and the grade of instruction shall be arranged to meet the needs of the community, provided, however, that the grade of instruction shall be less than college grade. As far as possible the academic subjects taught shall be correlated with the trades.

*Mathematics.*

The examples and problems should be, as far as possible, from actual shop experience. Examples and propositions involving the application of plane geometry should be particularly emphasized.

*English.*

Good usage of words and grammatical form should be insisted upon at all times. Topics for composition work should deal with the description of trade and industrial work, and should be oftentimes in the shape of reports after the visit to the industrial plants of the city. Particular attention must be given to punctuation, capitalization, paragraphing. Common grammatical errors which are made almost daily, should be carefully corrected. Current trade and technical papers and magazines should be placed at the disposal of the boys with every encouragement for them to read and study industrial conditions over the country.

*History.*

This subject should be presented very largely from the economic and industrial point of view. At the same time a good knowledge of the social and political development of the country must be insisted upon. The main purpose of the course in history and civics is to develop in the boy patriotic ideals and an appreciation of the principles of good citizenship.

*Hygiene.*

This subject should deal particularly with personal and home conditions and with first aid remedies. Industrial hygiene and sanitation shall also be taught.

*Drawing.*

This subject shall be closely related to actual shop work. The purpose of the course is to give such training as will enable the student to make patterns, designs, blue prints, etc., necessary to the trade.

*Science.*

Industrial chemistry and physics constitute a most important branch in vocational training in the trades and industries. An elementary course in general chemistry and physics is necessary as a basis on which the industrial aspects of these sciences can be intelligently pursued. The laws of physics which underlie construction work and which relate to many of the activities of the shop must be carefully taught. Likewise the principles of chemistry underlying important manufacturing and industrial undertakings must be clearly presented.

Several types of vocational education in the trades and industries can be readily placed upon a useful and productive basis. A course in printing, for instance, can serve as an excellent vocational unit of instruction and at the same time can print for the school system most of the forms and printed stationery which may be used. In carpentry and cabinet making the schools may be supplied with innumerable cabinets, stands, sand tables, drawing tables, etc., which would serve as a good basis of instruction for the pupils and place the work immediately upon a productive basis.

- (g) Not less than half the time or 15 hours per week must be given to practical work on a useful or productive basis. Printing of school forms in the print shop and making of school equipment, etc., as indicated in the course of study, show the nature of the practical work which may be undertaken.
- (h) The school term shall be not less than nine months or thirty-six weeks.
- (i) At least thirty clock hours of instruction shall be given each week.
- (j) The qualifications of teachers shall be—
  - (1) For shop or trade teachers, a journeyman of two years' experience who shall have completed the course in teacher training of not less than one nor more than three years.
  - (2) For teachers of related subjects, the completion at a technical college of a course in the related subjects at least two years in advance of the standard high school course.
  - (3) For teachers of non-vocational subjects, completion of two years' work in the subjects to be taught at a college or normal school over and above the standard high school requirement.

E. In cities and towns of less than 25,000 population industrial schools or classes may be conducted.

- (a) The controlling purpose shall be to fit for useful employment.
- (b) The work is designed to meet the needs of persons over 14 years of age.
- (c) A minimum for plant and equipment shall be required which in the estimation of the State Board will satisfy the demand of proper instruction.

- (d) A minimum for maintenance is required which will provide well qualified teachers and material necessary for the course of instruction.
- (e) The general character and content of the course of study shall be similar to that outlined for the day unit trade schools, subject to such modification as may be made to meet the requirements of the community.
- (f) The methods of instruction in the day trade unit schools shall prevail in the general industrial school.
- (g) Half the time shall be given to practical work on a useful or productive basis.
- (h) The length of the school year shall be nine months except in those cases where the State Board may permit a shorter term.
- (i) Not less than twenty-five hours of instruction shall be given each week.
- (j) The qualifications of teachers shall be the same as those required for the day unit trade school.

### 3. *Home Economics Education.*

- A. (a) The State Board intends to aid from the Federal funds home economics in evening schools for the benefit of women employed in home making or occupied during the day in similar or related duties.
- (b) In part time schools or classes home economics will be offered wherever practicable to persons who have entered upon employment.
- (c) In schools in cities with a population over 25,000 home economics departments will be established in conformity with the condition set forth in a following section.
- (d) In cities and communities of less than 25,000 population home economics departments will be conducted in day schools with such variations as conform to the general purposes of the act.

B. For evening home economics schools or classes.

- (a) The age of entrance shall be a minimum of 16 years.
- (b) The plant and equipment shall be of the same general character and of about equal cost to that stipulated for the regular day school.
- (c) A minimum for maintenance sufficient to employ the requisite number of qualified teachers is required.
- (d) The course of study shall be such as to help the worker in her present or future occupation of home mak-

ing. The contents of the specific subjects and the method of instruction shall approximate those for the regular full time school. The following type of course is illustrative of the kind of work which may be offered to each.

#### OUTLINE OF MILLINERY COURSE.

- (1) Drafting of paper patterns.
- (2) Crinoline models.
- (3) Making of buckram frames from patterns.
- (4) Hat trimmings.
- (5) Wire frames—one and two pieces.
- (6) Reshaping and retrimming—general renovation of hats, etc.

- (e-f) Character of school work and methods of instruction shall be such as to encourage skill or knowledge in direct relationship with the employment of home making. Practical lessons in nearly every phase of home making shall be brought out in such way as to show what contribution can be made to the economy and general efficiency of the employment. Teachers are supposed to have a sympathetic contact with home occupations and practically in every lesson they should emphasize the individual and social importance of the work.
- (g) The qualifications of teachers shall be the same as those required for the day school or in lieu of professional training and experience, trade experience of at least one year with academic training equivalent to the completion of the elementary course may be accepted.

**C. Home economics may be offered in part time schools and classes to persons.**

- (a) Between the ages of fourteen and eighteen.
- (b) The requirements for plant and equipment shall be the same or equivalent to that required for the all day school.
- (c) The minimum for maintenance is required sufficient to employ an adequate force of qualified teachers.
- (d) The character and content of course of study shall be such as to develop the worker in her regular employment or such as to contribute to her vocational and social efficiency. Wherever practicable part time courses in sewing, cooking, and in related subjects will be offered.
- (e) The methods of instruction shall be such as to carry out the general purposes of the act.

- (f) At least 144 sixty-minute hours of instruction per year shall be given. On the basis of the nine months' session the minimum requirements would be four hours per week.
- (g) The qualification of teachers shall be the same as those required for the day schools or in lieu of such professional training and experience, trade experience of at least one year with academic training thru the elementary grades may be required.

D. The State Board proposes to provide for home economics in cities of more than 25,000 population.

- (a) The age of admission shall be not less than 14 years.
- (b) The minimum for plant and equipment shall be
  - (1) For food study, \$250.
  - (2) For garment making and dressmaking, \$150.
  - (3) For home nursing, \$50.
  - (4) For laundry work, \$50. The State Board urges that for laundry work the pattern laundry and steam dryer be used.
- (c) The minimum for maintenance is required which will be sufficient to secure an adequate number of qualified teachers and to provide the material necessary for the course.
- (d) The following course of study is proposed for cities with population over 25,000.

#### For Cities Over 25,000.

##### First Year.

English .....	5 periods	1 unit
General Science .....	7-8 periods (45 m.)	$\frac{1}{2}$ unit
Drawing and Design .....	5 periods (90 m.)	$\frac{1}{2}$ unit
Garment Making—Textiles .....	5 periods (90 m.)	1 unit
Cooking and Food Study..... (Production, distribution, marketing.)	5 periods (90 m.)	1 unit

##### Second Year.

English .....	5 periods	1 unit
Household Chemistry and Physics.....	7-8 periods (45 m.)	$\frac{1}{2}$ unit
Civics and Citizenship .....	5 periods	$\frac{1}{2}$ unit
Home Management .....	5 periods (90 m.)	$\frac{1}{2}$ unit
(Housekeeping, planning and serving meals, laundry, accounts.)		
Dress design, house planning and furnishing.	5 periods (90 m.)	$\frac{1}{2}$ unit
Sanitation, Hygiene .....	7-8 periods (45 m.)	$\frac{1}{2}$ unit
Home Nursing .....		
Dressmaking, Millinery .....	5 periods (90 m.)	$\frac{1}{2}$ unit
Home Projects .....	3 periods (45 m.)	

- (e) Methods of instruction shall be such as to provide knowledge and skill in the household arts and to arouse a proper conception of the importance of this training. The instruction must be intensely practical in nature.
- (f) Half of the time required for home economics instruction shall be given to practical work on a useful or productive basis. This practical work may consist in preparing and serving school lunches, in garment making on a productive basis, etc.
- (g) The length of the school year must be at least nine months.
- (h) Thirty hours of instruction shall be provided each week, one-half of which time, namely, fifteen hours per week, or three hours per day must be devoted to home economics.
- (i) Qualifications of teachers shall be as follows:
  - (1) Practical experience of at least one year before or after entering upon the course in special training. Such experience may be secured as a helper in the home with some responsibility for management. Actual work under supervisor in the dormitory, cafeteria, etc.; can be accepted as a part of this requirement.
  - (2) Professional training of at least four years based upon graduation from a standard four year high school.
  - (3) 50 per cent. of the four year course shall be devoted to practical and related technical subjects in home economics and the remaining 50 per cent. to scientific and academic branches and to educational subjects. At least 15 per cent. of the four year course shall be given to educational subjects such as psychology, school management, methods in vocational education, and practice teaching. In the senior year at least four weeks should be devoted to practical house keeping and house management under a supervisor. Home projects assigned by the instructor to be undertaken during vacation with written reports must form a part of the course.

The State Board, in its discretion, may accept as teachers of home economics graduates of the two-year course in the State Normals, based upon the same conditions of entrance as the four-year course. Such graduates may be considered eligible for teaching home economics in part time schools, in evening schools, and in regular all day schools, provided, that after 1920 graduation from the four years' course, as above out-

lined, shall be required for teachers in the all day school.

E. In cities, towns, and communities of less than 25,000 population, home economics classes may be offered.

- (a) Age of admission is not less than fourteen years.
- (b) The requirement for plant and equipment shall be a room of about 22x28x13, with equipment costing not less than \$250.
- (c) A minimum for maintenance is required sufficient to employ properly trained teachers and to provide an amount for material of not less than \$5 per pupil per session.
- (d) The course of study shall conform to the following outline.

**For Cities, Towns, and Communities of Less Than 25,000.**

**First Year.**

English .....	5 periods	1 unit
History .....	5 periods	1 unit
Drawing and Design .....	5 periods (90 m.)	$\frac{1}{2}$ unit
Garment Making .....	5 periods (90 m.)	$\frac{1}{2}$ unit
General Science (Household) .....	7-8 periods (45 m.)	$\frac{1}{2}$ unit
Food Study and Cooking .....	5 periods (90 m.)	$\frac{1}{2}$ unit

**Second Year.**

English .....	5 periods	1 unit
Civics and Citizenship .....	5 periods	1 unit
General Science .....	7-8 periods (45 m.)	$\frac{1}{2}$ unit
Elementary Dressmaking .....	5 periods (90 m.)	$\frac{1}{2}$ unit
Home Management .....	5 periods (90 m.)	$\frac{1}{2}$ unit
Sanitation, Hygiene, Home Nursing.....	7-8 periods (45 m.)	$\frac{1}{2}$ unit

**Third Year.**

English .....	5 periods	1 unit
Elective .....	5 periods	1 unit
Clothing design, house planning and furnishing .....	5 periods (90 m.)	$\frac{1}{2}$ unit
Textiles, Millinery, Dressmaking .....	5 periods (90 m.)	$\frac{1}{2}$ unit
Household Chemistry .....	7-8 periods (45 m.)	1 unit
or		
Electives from regular high school course...	10 periods	2 unit

**Fourth Year.**

English .....	5 periods	1 unit
Elective .....	5 periods	1 unit
Household Physics .....	7-8 periods (45 m.)	1 unit
Textiles, Millinery, Dressmaking .....	5 periods (90 m.)	$\frac{1}{2}$ unit
Elementary Dietetics, Home Management...	5 periods (90 m.)	$\frac{1}{2}$ unit
or		
Electives from regular high school course...	10 periods	2 unit

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- (e) Methods of instruction shall be such as to encourage knowledge and skill in home making. The related subjects must be taught as furnishing a scientific basis for the practical work. Academic branches shall be presented in such way as to develop an appreciation of citizenship and to encourage social ideals.
- (f) At least one-half the time should be devoted to practical and related subjects in home economics, such as garment making, food, cookery, house planning, budget making, etc.
- (g) The length of the school year shall not be less than nine months.
- (h) At least 2 1-2 hours per day, or 12 1-2 hours per week shall be given to practical and related subjects.
- (i) Qualifications of teachers shall be the same as those required for the cities of over 25,000 population.

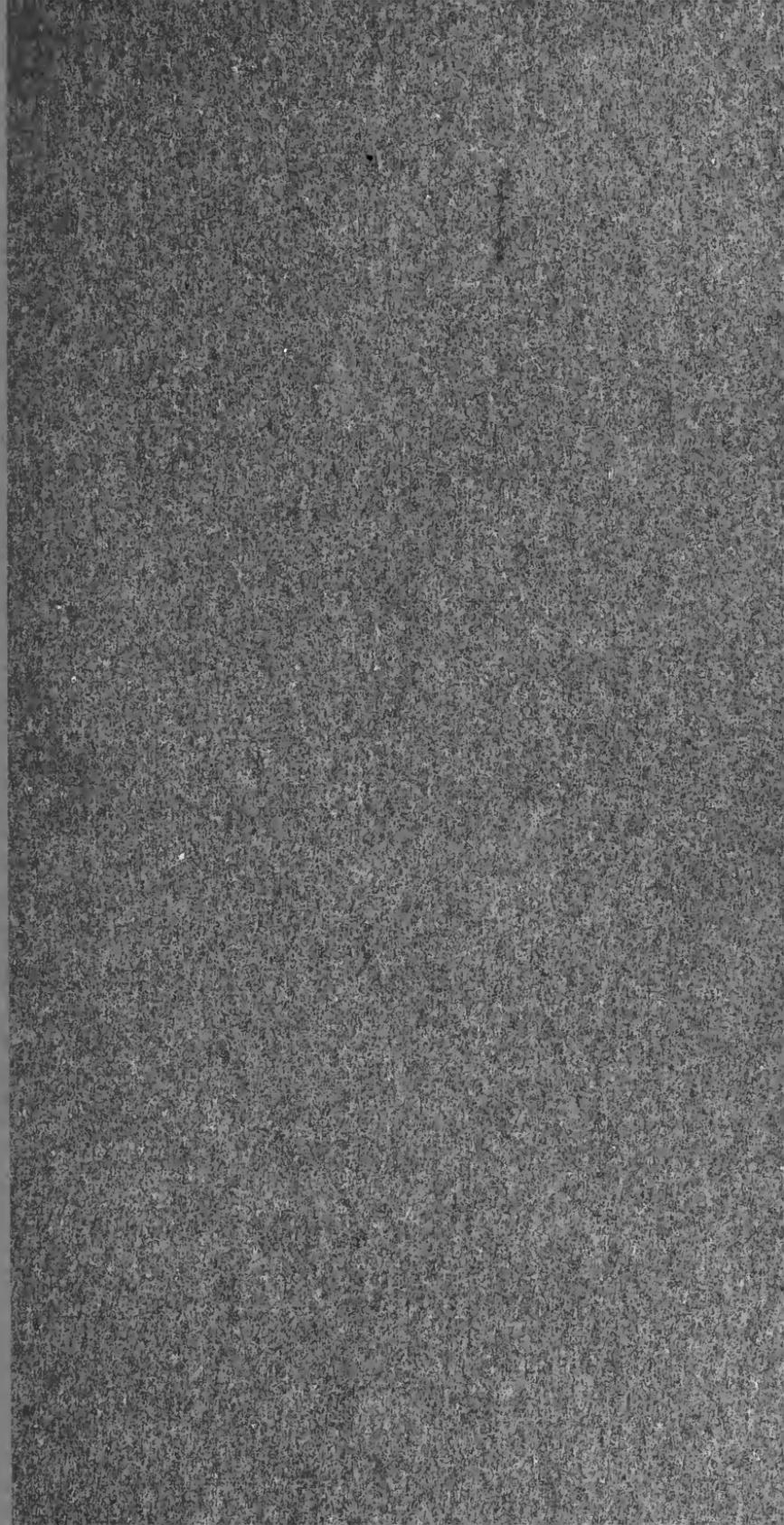
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